FY2006

CAMP BULLIS
TEXAS
INSTALLATION ACTION PLAN

Printed August 2005

Statement of Purpose

The purpose of the Installation Action Plan (IAP) is to outline the total multi-year Installation Cleanup Program for an installation. The plan will define environmental cleanup requirements at each site or area of concern, and propose a comprehensive, installation-wide approach, with associated costs and schedules, to conduct investigations and necessary remedial actions**.**

In an effort to coordinate planning information between the restoration manager, U.S. Army Environmental Center (USAEC), Camp Bullis, Installation Management Agency-Southwest Regional Office (IMA-SWRO), executing agencies, regulatory agencies, and the public, an IAP was completed. The IAP is used to track requirements, schedules, and budgets for all major Army installation cleanup programs.

All site-specific funding and schedule information has been prepared according to projected overall Army funding levels and is therefore subject to change.

Contributors to this IAP conducted on March 9, 2005:

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Acronyms & Abbreviations

ACAD	Academy of Health Sciences
AEDB-R	Army Environmental Database - Restoration
AMEDDC&S	U.S. Army Medical Department Center and School
APAR	Affected Property Assessment Report
BAMC	Brooke Army Medical Center
BRAC	Base Realignment and Closure
CAIS	Chemical Agent Identification Sets
CB	Camp Bullis
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CMI(C)	Corrective Measures Implementation (Construction)
CMI(O)	Corrective Measures Implementation (Operation)
CMS	Corrective Measures Study
COC	Contaminant of Concern
CP	Compliance Plan
CSM	Conceptual Site Model
CTC	Cost-to-Complete
CWA	Clean Water Act
DANC	Decontamination Agent, Non-Corrosive
DERA	Defense Environmental Restoration Act
DMSET	Deployable Medical Systems Equipment and Training
DOD	Department of Defense
DRMO	Defense Reutilization and Marketing Office
DSERTS	Defense Site Environmental Restoration Tracking System (now AEDB-R)
EAA	Edwards Aquifer Authority
EOD	Explosive Ordnance Disposal
EPA	Environmental Protection Agency
ER,A	Environmental Restoration, Army
FAA	Federal Aviation Administration
FY	Fiscal Year
GW	groundwater
HQ	Headquarters
HW	Hazardous Waste
IAAFA	Inter-American Air Force Academy
IAP	Installation Action Plan
IERA	Institute of Environmental Safety and Occupational Health Risk
IMA-SWRO	Installation Management Agency-Southwest Regional Office
RA	Interim Remedial Action
IRP	Installation Restoration Program
ITAM	Integrated Training Area Management
K	Thousand
LAR	Landfill Assessment Report
LF	Landfill
LTM	Long-term Management
LUC	Land Use Controls

Acronyms & Abbreviations

MC	Munitions Constituent
MCL	Maximum Contaminant Level
MEDCOM	U.S. Army Medical Command
MEC	Munitions Explosive Constituent
mm	Millimeter
MMRP	Military Munitions Response Program
MW	Monitoring Well
NPL	National Priorities List
NE	Not Evaluated
NEPA	National Environmental Protection Act
NOE	Notice of Enforcement
NOR	Notice of Registration
NOV	Notice of Violation
NPDES	National Pollution Discharge Elimination System
OB	Open Burn
OD	Open Detonation
O&M	Operation & Maintenance
OWS	Oil Water Separator
PA	Preliminary Assessment
PBC	Performance Based Contract
PCA	1,1,2,2- tetrachloroethene
PCE	tetrachloroethene
PCL	Protective Concentration Level
PMZ	Plume Management Zone
POL	Petroleum, Oil and Lubricants
PWBC	Public Works Business Center
RA	Remedial Action
RA (C)	Remedial Action – Construction
RC	Response Complete
RCRA	Resource Conservation and Recovery Act
RD	Remedial Design
REM	Removal
RFA	RCRA Facility Assessment
RFI	RCRA Facility Investigation
RI	Remedial Investigation
RRSE	Relative Risk Site Evaluation
SI	Site Inspection
SVE	Soil Vapor Extraction
SVOCs	Semi Volatile Organics
sw	surface water
SWMU	Solid Waste Management Unit
TANG	Texas Army National Guard
TAPP	Technical Assistance for Public Participation
TCE	Trichloroethylene
TCEQ	Texas Commission on Environmental Quality (formerly TNRCC)

Acronyms & Abbreviations

TI	Technical Impracticability
TNRCC	Texas Natural Resource Conservation Commission (now TCEQ)
TRC	Technical Review Committee
TRRP	Texas Risk Reduction Program
TWC	Texas Water Commission
TWQ	Texas Water Quality
ug/L	Micrograms per Liter
USACE	United States Army Corps of Engineers
USACHPPM	United States Army Center for Health Promotion and Preventive Medicine (former USAEHA)
USAEC	United States Army Environmental Center
USAEHA	United States Army Environmental Hygiene Agency (now USACHPPM)
UXO	Unexploded Ordnance
VOCs	Volatile Organic Compounds
VSI	Visual Site Inspection
WWTP	Wastewater Treatment Plant

Installation Information

INSTALLATION LOCALE: Camp Bullis (CB) is located on 27,880 acres of land primarily in Bexar County, Texas. It is situated approximately 19 miles northwest of downtown San Antonio, Texas and Fort Sam Houston.

INSTALLATION MISSION: The mission of Camp Bullis is to provide ranges, training areas, air space, and facilities to support federal, state, and local government activities. Camp Bullis serves as the field training installation in support of military activities including Army, Air Force, Navy, Marine Corps, and Army Reserve units stationed in and around the San Antonio and South Texas area. The facility has been active since 1906 when it was known as Camp Funston and designated as the Leon Springs Military Reservation. The major users of Camp Bullis include: Academy of Health Sciences (ACAD) and Joint Medical Readiness Training Center (part of the U.S. Army Medical Department Center and School [AMEDDC&S]); U.S. Army Deployable Medical Systems Equipment for Training (DMSET); Brooke Army Medical Center (BAMC); 5th U.S. Army 6th Military Intelligence Battalion; Inter-American Air Force Academy (IAAFA); U.S. Air Force Air Education and Training Command; U.S. Air Force Ground Combat Skills Training; Texas Army National Guard; Federal Aviation Administration (FAA); 343rd Training Squadron; E Company Academy BN; DHO/SIMM Center; SWARISC; Headquarters 1/141st Texas National Guard; DMRTI; 95th RSC; and Southwest Research Institute.

Camp Bullis, and is responsible for coordinating natural resource conservation management and training maneuvers. In keeping with the Camp Bullis mission, the facility operates an Explosive Ordnance Disposal (EOD) Range for the treatment of waste ordnance. The San Antonio Police Department also detonates explosives at EOD Range for both emergency disposal and training purposes. The OB/OD Area is the RCRA-permitted unit located within the EOD Range. Other activities at the installation include weapons training, field training, maneuvers at the Camp Bullis map and compass courses, parachute training, and combat assault landing. To accommodate these activities and to provide personnel and logistical support, numerous facilities are located throughout the installation. Additionally, Camp Bullis provides recreational opportunities for active and retired military personnel. The Boy Scouts of America also used the training areas of Camp Bullis for mountaineering, land navigation training, and camping.

The Public Works Business Center (PWBC) provides general maintenance services for the Camp Bullis reservation. The Environmental and Natural Resources office operates at the reservation under the Southwest Regional Office. The Integrated Training Area Management (ITAM) program also operates at the reservation under the administration of Headquarters,

COMMAND ORGANIZATION:

MAJOR COMMAND: U.S. Army Installation Management Agency (IMA)
SUBCOMMAND: IMA-Southwest
INSTALLATION: Camp Bullis
***INVESTIGATION PHASE EXECUTING AGENCY*:** U.S. Army Garrison, Environmental and Natural Resources Office, Fort Sam Houston, Texas
***EXECUTING AGENCY*:** U.S. Army Corps of Engineers; Tulsa District

REGULATOR PARTICIPATION:

Federal **-** U.S. Environmental Protection Agency, Region VI and U.S. Fish and Wildlife Service

State **-** Texas Commission on Environmental Quality (TCEQ)

NPL STATUS:

- Non-NPL with RCRA Corrective Action
- RCRA Hazardous Waste Part B Permit, November 1997
- Class 2 Permit Modification issued and revised Detection Monitoring System at OB/OD Area, August 2000
- Notice of Violation packages (NOV) since the RCRA Part B Permit was issued in November 1997– 2 (1998 and 2001)
- Notice of Enforcement (NOE) – 1 (4 May 1999)
- Interagency Agreements – None
- Federal Facility Agreements – None
- National Pollutant Discharge Elimination System (NPDES) Permit No. TX-0031224, early 1980
- TNRCC water quality permit, Texas Water Quality (TWQ) Permit No. WQ0012080-001, May 1997
- Compliance Plan Application submitted September 1999 (modification to Part B Permit)
- Received Draft Compliance Plan prepared by TNRCC (now called TCEQ) on 18 August 2000
- Submitted comments to TNRCC (now called TCEQ) on the Draft Compliance Plan – 2001
- Approval of Final Safety Submission by Department of Defense Explosive Safety Board January 2002
- Submitted comments to TCEQ on 2nd version of the Draft Compliance Plan in Fall 2002
- Received Final Approved Compliance Plan (No. CP-50335) on 31 October 2003

RAB/TRC/TAPP STATUS: No RAB/TRC/TAPP has been established at this time.

PROGRAM SUMMARIES:

Active IRP: Metals, Chemical Agents, VOCs
Media of Concern: Groundwater, Soil, Surface Water
Estimated date for RIP/RC: 200709/201709
Funding to Date: (through FY04): $9,694,000
CTC: $6,139,000

MMRP:

Contaminants of Concern: MEC/MC, Lead, Arsenic
Media of Concern: Groundwater, Soil
Estimated date for RC: September 2014 (with indefinite LUCs)
Funding to Date: $25,000
CTC: $5,352,000

Cleanup Program Summary

HISTORIC ACTIVITY: Camp Bullis is an active U.S. Army facility and is not on any proposed closure list. Camp Bullis was first established as the Leon Springs Military Reservation in 1906 for use as a military training facility.

The installation currently serves as the field training facility in support of all military activities in the south Texas area. These activities include, but are not limited to, weapons training, field training, maneuvers, camp and compass courses, and parachute operations. Major users of the installation are the Academy of Health Sciences, Brooke Army Medical Center, U.S. Air Force Academy of Health Sciences, 343rd Training Squadron, E Company Academy BN, DHO/SIMM Center, U.S. Army Deployable Medical Systems Equipment for Training (DMSET), HQs 1/141st Texas National Guard, 6th Military Intelligence, DMRTI, 95th RSC, U.S. Air Force Air Training Command, the Texas National Guard, and Southwest Research Institute. Camp Bullis also houses an Explosives Ordnance Disposal Range that is utilized by various organizations to explode ordnance found throughout south central Texas and elsewhere. Portions of Camp Bullis are also used for recreational purposes. Seasonal hunting, shooting and youth adventure sporting are among the featured recreations at Camp Bullis.

The lead regulatory agency for Camp Bullis is the Texas Commission on Environmental Quality (TCEQ), which represents the state and the EPA when conducting inspections and administering NOVs.

PROGRAM PROGRESS: Camp Bullis was originally issued a RCRA Part B Permit HW-50335 on November 7, 1997. The Open Burn/Open Detonation unit is the only regulated unit specified in the permit authorized for the management of hazardous waste. Permit Section VII, Corrective Action for Solid Waste Management Units, identifies all sites requiring investigation and include an open burn/open detonation area, drainage system and oil water separator, motor pool, drum storage area, and landfills.

The Drainage System and Oil Water Separator and TANG Motor Pool investigations are complete with no further action required. A soil investigation was performed at the Hunting Headquarters Storage Area. No reported constituents were detected above Texas Risk Reduction Program (TRRP) residential assessment levels. An Affected Property Assessment Report with a no further action recommendation for the Hunting Headquarters Storage Area was submitted to Texas Commission of Environmental Quality (TCEQ) and is pending review and approval.

The Open Burn/Open Detonation Area is the only regulated unit at Camp Bullis. Detection monitoring results indicated a statistically significant increase of contamination for volatile organics (acetone, benzene, carbon disulfide), explosives (HMX, RDX, and nitrobenzene), and barium. In accordance with the permit requirements, Appendix IX groundwater sampling was performed and the results indicated the presence of volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), metals, explosives, dioxins/furans, perchlorate, and sulfide. Soil characterization will not be performed until the OB/OD is considered inactive.

Inactive landfills are designated as Site-17 (Landfills 1, 10, 12A, 12B, 12C, 13A, and 13B) and Site-08 (Landfill 8). Contaminants of potential concern for Site-17 soils are metal constituents. Additional soil characterization is recommended for Landfills 10, 12, and 13. No release to groundwater has occurred based on sampling the existing monitoring well network. Evaluation of sediment contamination to Salado Creek in the vicinity of LF 12 and LF 13, as required by TCEQ, has not yet been performed.

Site-08 characterization has primarily focused on groundwater and surface water exposure pathways, since site access is restricted within the landfill boundary. Although soil samples have not been obtained for analyses, a non-intrusive soil gas survey was performed. The soil gas survey indicated chlorinated volatile organics (primarily trichloroethene [TCE] and tetrachloroethene [PCE]) flux emanating from the surface within the landfill boundary. The primary contaminant of concern in groundwater is TCE, detected at a maximum concentration of 194 µg/l, exceeding the MCL of 5 µg/l. Additional chlorinated VOCs were also detected including vinyl chloride, PCE, and 1,1,2,2, tetrachloroethene [PCA]. Surface water contamination detected at Lewis Creek (surface water and groundwater hydraulically connected) also includes chlorinated VOCs. Off-site water supply wells located within 500 feet of Camp Bullis boundary were sampled due to TCEQ concerns associated with the release at Site-08. The results indicated no chlorinated VOCs were detected in the off-site wells similar to those detected at Camp Bullis.

Camp Bullis received the Final Compliance Plan (CP-50335) on 31 October 2003.

MMRP: There are two (2) MMRP sites located at Camp Bullis.

BRAC: There are no BRAC sites located at Camp Bullis.

IRP Summary

REGULATORY STATUS:
Non-National Priorities List (NPL). RCRA Corrective Action as required by Part B Hazardous Waste Permit Application was submitted on 25 October 1988 and modified on 15 October 1993, on 1 May 1995, and again on 26 October 1995. The Hazardous Waste Permit No. HW-50335 was issued 7 November 1997 and the Compliance Plan No. CP-50335 was issued October 31, 2003.

AEDB-R SITES/SITES RC: 6/5
1 ER,A Active Site

AEDB-R SITE TYPES:

2 Landfills	1 Waste Treatment Plant
1 Unexploded Ordnance	1 Oil Water Separator
1 Surface Impoundment/Lagoon	

CONTAMINANTS OF CONCERN: VOCs, Metals, SVOCs, POL, Chemical Agents, Explosives

MEDIA OF CONCERN: Soil, Surface Water, Groundwater

COMPLETED REM/IRA/RA: Landfill 13 - IRA (1999)
OWS – RA (1994)
Huntington Headquarters – RA (1992)
OB/OD Area - IRA (1991)

IDENTIFIED POSSIBLE REM/IRA/RA: Site 8

TOTAL ER,A FUNDING:

PRIOR YEAR THROUGH FY04:	$ 9,694,000
CURRENT (FY05):	$ 2,620,000
FUTURE REQUIREMENTS:	$ 6,139,000
TOTAL:	$18,453,000

DURATION OF IRP:

Year of IRP Inception:	1976
Year of IRP Completion excluding LTM:	2017
Year of IRP Completion including LTM:	2027

IRP Contamination Assessment

Assessment Overview:

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Cleanup Exit Strategy:

Cleanup at Camp Bullis began in 1987. DOD initiated the Defense Environmental Restoration Program in an effort to address the widespread contamination found throughout the DOD facilities. In support of this effort, Camp Bullis (CB) was identified as containing restoration sites that required cleanup actions.

There were a total of 6 sites that were identified as requiring a preliminary assessment/site investigation. Contamination at these sites included, but not limited to, VOCs at the landfills and POL contamination at motor pool. Currently, none of the contaminated sites at CB have produced off-post contamination.

The Texas Commission on Environmental Quality (TCEQ) is the primary regulatory agencies that have authority for approving all cleanup actions at CB. The TCEQ is also authorized to issue final closure reports for any site that has achieved closure under their rules and regulations. CB currently has not established a Restoration Advisory Board (RAB). In the past, CB has sought interest in establishing a RAB, but the interest throughout the community has not been present. Due to CB having a hazardous waste permit and a compliance plan, the installation has in the past held public hearings where the community can inquire about restoration activities at CB.

Since the inception of the restoration program at CB, there have been 5 sites that have achieved a response complete. Therefore there remains only 1 sites that is still active in the restoration program. This site is designated as Site 8.

Site 8 is a formerly used landfill which contains, among other construction debris, chemical agent identification sets (CAIS). An assessment and sampling of the landfill site, to include surface soil, subsurface soil, and groundwater, have identified TCE contamination. The site is currently undergoing a site characterization investigation. Due to the karstic features at the site, it is highly difficult to delineate the TCE plume and determine affected receptors downgradient of the site.

A Workplan was developed for Site 8 to incorporate the differing site characterization investigations planned for the site. The following are investigations have been completed at Site 8: Soil gas survey; hydrogeologic survey; hydrophysics; groundwater, seep, drinking water well and sediment sampling; off-post groundwater sampling; screening level ecological risk assessment; and tracer testing.

Based on the current data, the landfill COCs are not migrating off-post at detectable concentrations. Upon completion of the ecological risk assessment, it is anticipated that the response actions could include a combination of technical impracticability (TI) and SVE for the source area and contaminant containment and/or MNA for the dissolved phase. The installation of multi-port sentry wells will be necessary to support monitored natural attenuation (FY05 funded). The response actions also are likely to include engineering controls such as surface water diversion to limit the amount of water that infiltrates into the landfill and fencing to limit human and large animal access. The Army also is considering a non-intrusive cap.

Cleanup Exit Strategy, continued:

Onsite groundwater and surface water sampling of approximately 20 points and off site groundwater sampling of 15 points will be done. Five year reviews will be conducted for the duration of the LTM phase.

PBC is currently being evaluated during FY05.

Previous Studies:

1967

- Chemical, Biological, and Radiological Decontamination. Technical Manual 3-220.

1985

- Geologic Study, Fort Sam Houston and Camp Bullis, San Antonio, Texas. Prepared by U.S. Army Environmental Hygiene Agency.

1992

- Hydrogeology of the Camp Bullis Area. Prepared by Waterteus.

1993

- RCRA Facility Assessment. Prepared by PRC.

1995

- Baseline Assessment Explosive Ordnance Disposal Range, Camp Bullis Military Reservation San Antonio, Texas. Prepared by EA.
- Camp Bullis Motor Pool Oil/Water Separator Assessment. Prepared by EA.
- Fort Sam Houston and Camp Bullis Landfill Assessment Report (LAR). Prepared by EA.
- Assessment and Declassification of Ten Suspect Landfills at Camp Bullis. Prepared by EA.

1997

- Groundwater Monitoring Results Fourth Quarter Report Volume I. Prepared by Earth Technology, Inc. (ET).
- Site 8 Groundwater Characterization Phase I Report. Prepared by Montgomery Watson (MW).
- Addendum to the Final Site 8 Groundwater Characterization Phase I Report. Prepared by MW.
- Final Phase III Groundwater Characterization Report for Site 8. Prepared by MW.

1998

- Groundwater Monitoring Results First Sampling Event 1998 Report. Prepared by ET.

Previous Studies, continued:

1999

- Camp Bullis OB/OD Groundwater Contaminants at the EOD Range Camp Bullis, Bexar County, Texas. Prepared by George Veni & Associates (Veni).
- RFI Report for the Drainage System and Oil/Water Separator and Hunting Headquarters Storage Area U. S. Army Camp Bullis, Texas. Prepared by GeoMarine Inc. (GMI).
- RCRA RFI for the OB/OD Area and the TANG Motor Pool U.S. Army Camp Bullis, Texas. Prepared by GMI.
- Texas Natural Resources Conservation Commission Compliance Plan Application for U.S. Army Camp Bullis, Texas. Prepared by GMI.
- Camp Bullis OB/OD Permit Requirements and Addendum (OB/OD Area Detection Monitoring) Report. Prepared by GMI.
- Camp Bullis OB/OD Permit Requirements, Supplemental Report. Prepared by GMI.
- Potential for Contaminant Movement into the Edwards Aquifer from the Site 8 Landfill, Camp Bullis, Texas. Prepared by Veni.

2000

- 1999 Annual Report OB/OD Monitoring. Prepared by USACE.
- Groundwater Monitoring Report January 2000 Sampling Event OB/OD. Prepared by USACE.
- Groundwater Monitoring Report July 2000 Sampling Event OB/OD. Prepared by USACE.
- Revised Addendum RCRA Facility Investigation Report for the TANG Motor Pool. Prepared by RF Weston.

2001

- 2000 Annual Report OB/OD Monitoring. Prepared by USACE.
- Groundwater Monitoring Report November 2000 Sampling Event. Prepared by USACE.

2002

- Final Off-Installation Well Identification and Sampling Program – March 2002. Prepared by Montgomery Watson Harza (MWH).
- Final Fourth Interim Data Evaluation Report for Site 8 – May 2002. Prepared by MWH.
- Records Search for Historic Wells and Identification of Potential Disposal Sites, Camp Bullis, Texas – November 2002. Prepared by MWH.

CAMP BULLIS

INSTALLATION RESTORATION PROGRAM
SITE DESCRIPTIONS

SITE 8
SWMU 10
LANDFILL 8
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SITE DESCRIPTION

The Site 8 Landfill is located in the central area of Camp Bullis between Lewis Creek and Cunningham Hill. The landfill comprises approximately 6 acres and is divided by Lewis Valley Road. A karst hydrogeologic environment (i.e., dominated by carbonate rocks where significant dissolution of the rock has occurred due to flowing surface water and groundwater) underlies Site 8, which significantly complicates the groundwater investigation. A portion of the groundwater beneath Site 8 discharges to Lewis Creek, which is a tributary to Salado Creek. During periods of high flow, Salado Creek flows south of Camp Bullis and recharges the Edwards Aquifer, which is the sole source aquifer for the San Antonio area. Groundwater in the Trinity Aquifer, which underlies Camp Bullis, also likely recharges the Edwards Aquifer to some degree.

STATUS

RRSE: High

CONTAMINANTS OF CONCERN:
Lead, Chemical Warfare Agents, TCE, PCE, PCA, Acetone/ 2-propanol

MEDIA OF CONCERN:
Soil, Groundwater, Surface Water

PHASES	Start	End
RFA	199410	199506
CS	199607	199710
RFI/CMS	199802	200609
IRA	200510	200709
CMI(C)	200609	200709
CMI(O)	200709	201709
LTM	201710	202709
RIP	**200709**	
RC	**201709**	

Aerial photographs indicate that disposal activities occurred at Site 8 began between 1945 and 1950, and ended between 1952 and 1955. During the Landfill Assessment in 1995, chemical agent identification sets (CAIS) were discovered. The Army performed a sweep to remove CAIS debris from the landfill surface, but has not performed any intrusive investigations within the landfill due to the health and safety logistics associated with potential chemical warfare agent (CWA) sites. Since the Landfill Assessment in 1995, non-intrusive investigations have been performed on the landfill (including surface geophysics and passive soil-gas surveys) and investigations have been performed outside the landfill (including groundwater, surface water, and sediment sampling, and groundwater tracer testing). The investigations outside the landfill confirmed that CWA is not present in the groundwater; however TCE and other chlorinated VOCs were detected in groundwater and surface water samples above drinking water regulatory levels (MCLs/PCLs). The source of VOC contamination in the groundwater and surface water downgradient of Site 8 has not been confirmed, but it may be the result of neutralizing CAIS with DANC (decontamination agent, non-corrosive), which contained solvents. TCEQ has issued a Compliance Plan stipulating continued investigation, monitoring, and response action.

Between 1997 and 2001, 21 groundwater monitoring wells have been installed.

Groundwater sampling in the monitoring wells and select Camp Bullis water supply wells, and surface water monitoring in nearby Lewis and Salado creeks has been performed approximately on a quarterly basis until 2003 when a stage-based sampling program was implemented. During the stage-based program, water samples are collected during low, moderate, and high (flood) flow stages to better assess contaminant transport in the karst system. The calendar-based and more recent stage-based sampling programs indicate that VOCs are not migrating off-Post at concentrations above MCLs/PCLs. Groundwater samples collected in 2001 and 2004 from offsite water supply wells located within ¼ mile of the Camp Bullis boundary did not contain VOCs, further suggesting that Site 8 COCs are not migrating off-Post at detectable concentrations.

In 2004, the Final Site 8 Work Plan was submitted to comply with recent Texas Risk Reduction Program (TRRP) rules adopted by the TCEQ. The Site 8 Work Plan included an updated conceptual site model (CSM) and identified the investigation activities required to fill data gaps in the CSM, including additional groundwater tracing, borehole geophysics/hydrophysics, repeating the soil gas survey, converting karst features to monitoring wells, and collecting data to support an ecological risk assessment. These investigation activities are currently underway, and once complete, an Affected Property Assessment Report (APAR) and a Response Action Plan will be prepared for Site 8.

CLEANUP STRATEGY

Based on current data that indicates Site 8 COCs are not migrating off-Post at detectable concentrations, and based on the anticipated outcome of the ecological risk assessment. It is anticipated that the response actions could include a combination of technical impracticability (TI) and SVE for the source area and contaminant containment and/or MNA for the dissolved phase. The installation of multi-port sentry wells will be necessary to support monitored natural attenuation (FY05 funded). The response actions also are likely to include engineering controls such as surface water diversion to limit the amount of water that infiltrates into the landfill and fencing to limit human and large animal access. The Army also is considering a non-intrusive cap. Onsite groundwater and surface water sampling of approximately 20 points and off site groundwater sampling of 15 points will be done. Five year reviews will be conducted for the duration of the LTM phase.

PBC is currently being evaluated during FY05.

Response Complete Sites

AEDB-R #	*SITE NAME*	*RC DATE*
SITE 13	SEWAGE TREATMENT AREA	199707
SITE 14	RANGE IMPACT AREA	198901
SITE 15	CAMP BULLIS MOTOR POOL	198901
SITE 16	TEXAS NAT'L GUARD MOTOR POOL	198901
SITE 17	CAMP BULLIS LANDFILLS	199406

PAST MILESTONES

Start Date of IRP at Installation: 1976

1977
• March - Installation Assessment/Records Search

1987
• July - RI/FS, NPL Landfill (FTDX - 10)

1989
• January - PA/SI, Installation

1990
• January - Phase I RI Report, Installation

1991
• September - Enhanced Preliminary Assessment, Installation

1992
• January - Phase II RI Report, Installation
• June - Phase I RD, NPL Landfill

1993
• December - LTM Plan, NPL Landfill

1994
• February - Phase II RD, NPL Landfill

1996
• August - Phase II RA, NPL Landfill

1997
• April - MAG-1 RI, Final
• April - EI (19 Sites), Final
• October - RI (Golf Course Sites, Taxi Stand, Area NDL), Final
• April - RI Boiler Blowdown Area, Draft
• August - RI ARDC Facility, Draft
• August - RI Fire Training Tanks, Draft

1998
• April - Closure Plan (Group II ER,A USTs, Final
• April - Alternative Analysis (19 Sites), Final
• September - FS MAG-1, Final

PAST MILESTONES

1981
Camp Bullis operated under NPDES Permit No TX-0031224

1988
Submitted Part B Hazardous Waste Permit Application to the Texas Water Commission (TWC)

1990
TWC requested additional information for the Part B Permit Application

1992
Drums removed from Hunting HQ Storage Area

1993
Received final RCRA Facility Assessment report
Part B Permit Application was revised

1994
Original Oil Water Separator was replaced as part of an Interim Corrective Measure
EA performing Landfill Assessment fieldwork

1995
Received final Landfill Assessment report
TNRCC issued a NOD
Part B Permit Application was revised

1996
Quarterly groundwater sampling of landfills

1997
Received Groundwater Monitoring Results Fourth Quarter Report
Site 8 Landfills PA/SI completed
Site 13 Sewage Treatment Area completed
Landfill 8- MW conducting groundwater investigation to determine if chemical warfare material was released to groundwater
TNRCC conducted Compliance Evaluation Inspection
Received TNRCC Hazardous Waste Permit No. HW-50335 and Facility Air Quality Permit No. BG0586L

PAST MILESTONES

1998
Received Groundwater Monitoring Results for the First Sampling Event (EarthTech, non-IRP)
Site 8 Landfills RI/FS completed
TNRCC Industrial and Hazardous Waste NOR# 69062 amended and electronically updated Site 8
TNRCC issued a NOV package

1999
Landfills RD and REM/RA completed
Landfill 8- Montgomery Watson completed initial groundwater investigation of chemical warfare materials (not detected in groundwater)
Landfill 13- Drainage improvements along streambed completed
OB/OD Interim Corrective Measure drainage diversion terrace constructed
MW conducted 3rd phase of monitoring well installation and groundwater sampling
Completed the following documents:
RFI for the Drainage System and Oil/Water Separator and Hunting Headquarters Storage Area
RFI for the OB/OD Area and the TANG motor pool
OB/OD Permit Requirements and Addendum (OB/OD Area Detection Monitoring) Report
OB/OD Permit Requirements, Supplemental Report
Submitted TNRCC Compliance Plan Application – (OB/OD Area and Landfill 8)

2000
OB/OD Area - The Compliance Plan Application was withdrawn for this site
OB/OD Area - Class 2 Permit Modification issued August 25
OB/OD Area – Groundwater detection monitoring system revised. 2 new wells were installed and 2 existing wells were plugged
OB/OD Area – First quarterly sampling event for revised monitoring system occurred in November, Two Class 1 Modifications were submitted in December
Landfill 8 – Site 8 the Draft Final Data Management Plan was submitted to the TNRCC in April
Landfill 8 – Received the TNRCC authority to implement RFI in May
Landfill 8 – Installed 2 new monitoring wells, conducted 2 rounds of sampling
Landfill 8 – Received initial Draft Compliance Plan prepared by TNRCC on 18 August - ongoing
Drainage System and Oil Water Separator – Updated NOR August – Response Complete
TANG Motor Pool – Additional investigations performed and RFI Addendum submitted December

2001
Landfill 8 – Revised the Final Safety Submission for Interim Stabilization Measure at Site 8 to include provisions for Intrusive Investigation
Hunting Headquarters Storage Area - Conducted additional field investigations during spring
TNRCC issued a NOV package from the August Compliance Evaluation Inspection
Submitted comments to TNRCC on the Draft Compliance Plan

PAST MILESTONES

2002
Approval of Final Safety Submission by Department of Defense Explosive Safety Board January
Submitted comments to TCEQ on 2nd version of the Draft Compliance Plan in Fall
Landfill 8- Conducted 3 rounds of groundwater/surface water sampling downgradient of the site

2003
TCEQ issued the Compliance Plan in May 03. FSH requested a Request for Reconsideration. Edwards Aquifer Authority (EAA) submitted a request to TCEQ foe a contested case hearing. Multiple negotiating sessions were held. Both Fort Sam Houston and EAA withdrew their request. All issues have been resolved. Expect plan to be issued in Nov 03.

The following sites currently require no further action:
Sewage Treatment Area (Site-13)
Camp Bullis Landfills (Site-17)

The following sites are not ER,A eligible and require no further action at this time.
Range Impact Area (Site-14)
Camp Bullis Motor Pool (Site-15)
Texas National Guard (TANG) Motor Pool (Site-16)

Completed REM/IRA/RA

IRA at Landfill 13
In 1999, Gabbion baskets were constructed to stabilize the bank along the stream channel.

RA at the Drainage System and Oil Water Separator (OWS)
The RA consisted of the removal of the original OWS system, the over-excavation of soil, an investigative effort, and replacement and retrofit of the OWS and drainage system components. Construction was completed in June 1994.

RA at the Hunting Headquarters Storage Area
The RA consisted of the identification of unlabeled drum stored at the site. The U.S. Army prepared an inventoried list of drums, drum contents, classification of the waste product, and disposition of waste or proposed use of the products. In 1992, all drums were removed. Drums containing oil and diesel fuel were sent to a recycling facility. The drums containing kerosene were burned in the Hunting Headquarters heaters and all others were disposed of via the DRMO.

IRA at the Open Burning/Open Detonation Area
In June 1999, a diversion terrace was constructed to divert rainwater run-off from the hill behind the area, reducing the potential for soil, surface water, and groundwater contamination.

PAST MILESTONES

Current REM/IRA/RA: None

Projected Completion Date IRP (excluding LTM): 2017

Estimated Completion Date of all RA(C) Activities: 2007

Estimated Completion Date of IRP at Installation (including LTM phase): 2027

Projected Completion Date of IRP: 2027

CAMP BULLIS IAP SCHEDULE

(Based on current funding)

CURRENT PHASE **FUTURE PHASE**

AEDBR#	PHASE	FY06	FY07	FY08	FY09	FY10	FY11	FY12	FY13	FY14	FY15+
Site 8	IRA										
	CMI (C)										
	CMI(O)										
	LTM										*202709*

PRIOR YEAR FUNDING

FY99	$ 916,000
FY00	$ 134,000
FY01	$ 2,410,000
FY02	$ 3,900,000
FY03	$ 1,334,000
FY04	$ 1,000,000
Total Prior Year Funding	**$ 9,694,000**

CURRENT YEAR FUNDING

FY05	**$2,620,000**

FUTURE YEAR FUNDING

TOTAL FUTURE REQUIREMENTS: **$6,139,000**

TOTAL IRP PROGRAM COSTS: **$18,453,000**

Community Involvement

A RAB does not exist at Camp Bullis.

The San Antonio community has been notified through newspaper announcements during the RCRA Part B Permit application and the Compliance Plan application process.

A core group has been established and will meet quarterly. The group consists of FSH/CB staff, Corps of Engineers (Tulsa District), Edwards Aquifer Authority, Texas Commission on Environmental Quality.

CAMP BULLIS

MILITARY MUNITIONS RESPONSE PROGRAM

MMRP Summary

STATUS: Non-NPL

AEDB-R SITES/SITES RC: 4/2

AEDB-R SITE TYPES:
2 Firing Ranges
2 Small Arms Range

CONTAMINANTS OF CONCERN: Arsenic, Lead, MEC/MC

MEDIA OF CONCERN: Soil

COMPLETED REM/IRA/RA: None

IDENTIFIED POSSIBLE REM/IRA/RA: RA at two sites

TOTAL ER,A FUNDING:

PRIOR YEAR	$ 25,000
CURRENT (FY 05)	$ 0
FUTURE	$ 5,352,000

DURATION OF MMRP:

Year of MMRP Inception:	2002
Year of RA Completion:	2014
Year of MMRP Completion:	2047 (with indefinite LUCs)

MMRP Contamination Assessment

Assessment Overview:

Four MMRP sites have been identified. No further action approved for two sites based upon the results of the Site Inspection.

Cleanup Exit Strategy:

Investigations for the two remaining sites are planned starting in FY08. No previous studies were supplied.

CAMP BULLIS

MILITARY MUNITIONS RESPONSE PROGRAM

SITE DESCRIPTIONS

CBULL-001-R-01
Stokes Mortars Munitions Site

SITE DESCRIPTION

This 101.49 acre area located near Training Area 8 was found to contain several 3-inch Stokes mortars, 2.36-inch high explosive anti-tank rockets and 37 mm rounds. These rounds were found during routine work in the area such as grading, land clearing, mowing and trenching. Specific quantities of ordnance items recovered from this area were not documented in the available records. A review of historic records and maps did not provide an indication that this area had been a designated range or impact area. The area is currently the location of Building 6215, Outdoor Recreation Headquarters, a recreational vehicle parking area and a baseball field.

STATUS

RAC Score: Moderate

CONTAMINANTS OF CONCERN:
Lead, Arsenic, MEC/MC

MEDIA OF CONCERN:
Soil

PHASES	Start	End
PA	200203	200305
SI	200309	200510
RI	200710	200809
RD	201210	201304
RA(C)	201305	201409
LTM	201710	204709
RC:	**201409**	

CLEANUP STRATEGY

Additional RI is planned. RA, including waste removal, may be needed.

CBULL-004-R-01
75 mm Munitions Site

SITE DESCRIPTION

Several live 75mm rounds were removed from a pit formerly located near Building 6104 in the Motor Pool within the Main Cantonment area. The ordnance was unearthed by a backhoe operator who was digging a drainage channel. At least five complete rounds, i.e. unfired projectile and propellant filled-case, were retrieved from the ditch line. This area is estimated to be less than 1 acre in size, and is currently an unimproved parking area.

CLEANUP STRATEGY

Additional RI is planned. RA, including waste removal, may be needed.

STATUS

RAC Score: Serious

CONTAMINANTS OF CONCERN:
Lead, Arsenic, MEC/MC

MEDIA OF CONCERN:
Soil

PHASES	Start	End
PA	200203	200305
SI	200309	200510
RI	200710	200809
RD	201210	201304
RA(C)	201305	201409
LTM	201710	204709
RC:	**201409**	

Response Complete Sites

AEDB-R #	*SITE NAME*	*RC DATE*
CBULL-002-R-01	MACHINE GUN RANGE	200508
CBULL-003-R-01	100 TARGET RANGE	200508

Schedule

PAST MILESTONES

Start Date of MMRP at Installation: 200203

Past Phase Completion Milestones: PA - 200305

PROJECTED MILESTONES

Estimated Completion Date of All RA(C) Activities: 201409

Estimated Completion Date of IRP at Installation (include LTM phase): 204709 - Indefinite LUCs

CAMP BULLIS MMRP IAP SCHEDULE

(Based on current funding)

CURRENT PHASE **FUTURE PHASE**

AEDBR#	PHASE	FY06	FY07	FY08	FY09	FY10	FY11	FY12	FY13	FY14	FY15+
CBULL-001-R-01	RI/FS										
	RD										
	RAC										
	LTM										*204709*
CBULL-004-R-01	RI/FS										
	RD										
	RAC										
	LTM										*204709*

PRIOR YEAR FUNDING

TOTAL: **$25,000**

CURRENT YEAR FUNDING

2005 **$0**

FUTURE YEAR FUNDING

TOTAL FUTURE REQUIREMENTS: **$5,352,000**

TOTAL MMRP PROGRAM COSTS: **$5,377,000**